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REMARKS

This Preliminary Amendment is intended to supplement the response to the final Office Action mailed November 21, 2003. In particular, the Applicants did not receive an Advisory Action from the Patent Office by the Applicant's response due date of April 21, 2004. The Applicants filed an RCE on April 21, 2004 to avoid additional lateness fees. No preliminary amendment or supplemental response was filed along with the RCE. The Applicants subsequently received the Advisory Action (paper no. 20) on April 22, 2004, whereby the Examiner indicated that the arguments and amendments set forth in the response to the Final Office Action (paper no. 17) were not persuasive. Accordingly, this Preliminary Amendment provides additional changes and arguments regarding the patent application for Examiner's review in conjunction with the previously filed RCE.

In the Office Action, the Examiner notes that claims 1-21 are pending, of which claims 1-19 and 21 are rejected and claim 20 is withdrawn from prosecution. By this amendment, claims 1 and 14 have been amended, claims 12, 19, and 20 have been canceled, new claim 22 has been added, and claims 2-11 and 13-18 continue unamended.

In view of both the amendments presented above and the following discussion, the Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in allowable form.

It is to be understood that the Applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to applicants' subject matter recited in the pending claims. Further, Applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendments.

REJECTIONS UNDER 35 U.S.C. §103A. Claims 1-3, 8, 11, 13-15

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The Examiner rejected claims 1-3, 8, 11, 13-15 under 35 U.S.C. 103(a) as being unpatentable over Naimpally (U.S. Patent No. 5,619,337, issued April 8, 1997, hereinafter "Naimpally"), and in view of Mao et al. (U.S. Patent No. 6,459,427, issued October 1, 2002, hereinafter "Mao"). Applicants respectfully traverse the rejection.

The Applicants' have amended independent claims 1 and 14 to include additional features the Applicants' consider as being inventive. In particular, claims 1 and 14, as amended, recite:

"1. An apparatus for encoding realtime and non-realtime interactive program guide (IPG) content comprising video content and guide data, the apparatus comprising:

a non-realtime encoder configured to encode non-realtime content into encoded non-realtime content slices;

a realtime encoder configured to encode the realtime content into encoded realtime content slices;

a remultiplexer configured to repacketize the encoded non-realtime content slices and the encoded realtime content slices into transport packets;

a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order; and

a re-timestamp unit coupled to the remultiplexer and configured to provide timestamps to be applied to the transport packets in order to synchronize the realtime and non-realtime content of said IPG." (emphasis added).

"14. A method for encoding realtime and non-realtime content of an interactive program guide (IPG), comprising:

encoding realtime content to generate encoded realtime content slices;

encoding non-realtime content to generate encoded non-realtime content slices;

combining slices of encoded realtime content with slices of encoded non-realtime content, wherein the encoded realtime content and non-realtime content are combined in a predetermined order;

repacketizing the combined encoded realtime content slices and the encoded non-realtime content slices into transport packets, wherein the repacketizing is based on the combined slices of encoded realtime and non-realtime contents; and

re-timestamping the transport packets with new timestamps in order to synchronize the realtime and non-realtime content of the IPG." (emphasis added).

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The test under 35 U.S.C. § 103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Thus, it is impermissible to focus either on the "gist" or "core" of the invention, Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 USPQ 416, 420 (Fed. Cir. 1986) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. In re Wright, 6 USPQ 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). The combination of Naimpally and Mao fails to teach or suggest the Applicants' invention as a whole.

In particular, the Naimpally reference discloses a system which separates one program from a multi-program transport stream for recording on a digital VCR. Each encoder includes three MPEG-1 or MPEG-2 elementary stream encoders, 140, 142, and 144. Encoder 142 is an NPEG video encoder. Encoder 142 may be a conventional MPEG audio encoder and encoder 144 may be a conventional MPEG data encoder. The packetized elementary stream (PES) packets provided by the various encoders 140, 142, and 144 are applied to a transport encoder/multiplexer 146. The multiplexer 146 formats each of the PES packets into one or more transport packets as defined in the MPEG standards. (See, Naimpally, Abstract, col. 5, lines 31-61, and FIGs. 1a and 1b). Nowhere in the Naimpally reference, and as the Examiner concedes, is there any teaching or suggestion of "a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order."

The slice combiner combines the received video slices with the guide data slices in the order in which the decoder at the receiver side can easily decode without further slice re-organization. The resultant combined slices are PID assigned and formed into an illustratively MPEG compliant transport stream(s) by the multiplexer (see Applicants' specification, page 12, lines 23-28).

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Furthermore the Mao references fails to bridge a substantial gap as between the Naimpally reference and the Applicants' invention. In particular, Mao merely discloses "The MPEG-2 multiplexer 70 can receive single program transport streams or multiple program transport streams though DVB (Digital Video Broadcasting) ASI (Asynchronous Serial Interface) up to 270 Mbps. Since each 6 MHZ cable channel can only fit about 27 Mbps using 64 QAM modulation, a remultiplexer is required to remultiplex the programs in order to fit into these channels. The remultiplexer 70 can perform remultiplexing single or multiple program transport streams into multiple program transport streams at different bit rates, re-assign PID (packet ID), adjust PCR (Program Clock Reference), and modify PAT/PMT (Program Association Table/Program Map Table), and insert conditional access messages such as ECM and EMM." (See, Mao, col. 5, lines 12-24). However, nowhere in the Naimpally and Mao references is their any teaching or suggestion of "a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order."

The Examiner contends (in the Final Office Action) that the transport encoder/multiplexer 146 (FIGS. 1A and 1B) of Naimpally reads on the slice combiner. The Applicants' respectfully disagree. The Applicants' invention encodes realtime video content slices and non-realtime video data slices. The resultant slices are then combined in a predetermined order by the slice combiner, prior to the multiplexer forming the transport streams. Nothing in either the Nampally or Mao references teaches or suggests that (i) the realtime and non-realtime content is respectively encoded into realtime content slices and non-realtime content slices, and (ii) that a slice combiner is utilized to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order. That is, both cited references, either singularly or in combination, are completely devoid of any teaching or suggestion of a slice combiner that combines slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order. Therefore, the combination of Naimpally, Mao, and the Examiner's official notice fails to teach or suggest the Applicants' invention as a whole.

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As such, Applicants submit that independent claims 1 and 14 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. In addition, dependent claims 2-3, 8, 11, and 13 (which depend either directly or indirectly upon independent claim 1, and 15 (which depends upon independent claim 14) are allowable at least for their dependency upon an allowable base claim. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-3, 8, 11 and 13-15.

B. Claims 1-9, 11-16, 19 and 21

The Examiner rejected claims 1-9, 11-16, 19 and 21 under 35 U.S.C. 103(a) as being unpatentable over Naimpally in view of Yanagihara (U.S. Patent No. 5,859,949, issued January 12, 1999, hereinafter "Yanagihara"). Applicants respectfully traverse the rejection.

As discussed above, the Naimpally reference merely discloses "In particular, the Naimpally reference discloses a system which separates one program from a multi-program transport stream for recording on a digital VCR. Each encoder includes three MPEG-1 or MPEG-2 elementary stream encoders, 140, 142, and 144. Encoder 142 is an NPEG video encoder. Encoder 142 may be a conventional MPEG audio encoder and encoder 144 may be a conventional MPEG data encoder. The packetized elementary stream (PES) packets provided by the various encoders 140, 142, and 144 are applied to a transport encoder/multiplexer 146. The multiplexer 146 formats each of the PES packets into one or more transport packets as defined in the MPEG standards. (See, Naimpally, Abstract, col. 5, lines 31-61, and FIGs. 1a and 1b). Nowhere in the Naimpally reference is there any teaching or suggestion of "a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order." Therefore, the Naimpally reference fails to teach or suggest the Applicants' invention as a whole.

Furthermore, the Yanagihara reference fails to bridge a substantial gap as between the Naimpally reference and the Applicants' invention. In particular, the Yanagihara reference merely discloses "Multiplexer 10 supplies the multiplexed signal

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at a bit rate of 30 Mbps to a PCR restamping circuit 12. PLL circuit 5 supplies the output of circuit 8, identified herein as data PCR' (see FIG. 6C), also to PCR restamping circuit 12 which replaces in the multiplexed signal the PCR data with the PCR' data. PCR restamping circuit 12 supplies the video signal (with the PCR' data) to channel coder/modulator circuit 13 which encodes and modulates the video signal utilizing a transfer clock signal TCK and the modulated signal is transmitted." (See, Yanagihara, col. 7, lines 58-67). Nowhere in the combined references is there any teaching or suggestion of "a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order."

That is, the combined references merely disclose a multiplexer for forming a transport stream. However, the combined references are completely devoid of any teaching or suggestion of "a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order." Therefore, the combined references fail to teach or suggest the Applicants' invention as a whole.

As such, the Applicants submit that independent claim 1 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Furthermore, independent claim 14 recites similar features as recited in independent claim 1. As such and at least for the same reasons as discussed above, the Applicants submit that independent claim 14 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 2-9, 11-13, 15-16, 19, and 21 respectively depend from independent claims 1 and 14 and recite the additional features thereof. As such and for at least the same reasons as discussed above, the Applicants submit that these dependent claims are also not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore, the Applicants respectfully request that the rejections be withdrawn.

C. Claims 10, 17 and 18

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The Examiner has rejected Claims 10, 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Naimpally in view of Yanagihara and further in view of Adams (U.S. Patent No. 6,044,396, issued March 28, 2000) ("Adams"). Applicants traverse the rejection.

Claims 10, 17 and 18 depend from independent claims 1 and 14, and recite additional features thereof. Claim 10 illustratively recites in part:

An apparatus for encoding realtime and non-realtime interactive program guide (IPG) content comprising video content and guide data, the apparatus comprising:

a non-realtime encoder configured to encode non-realtime content into encoded non-realtime content slices;

a realtime encoder configured to encode the realtime content into encoded realtime content slices;

a remultiplexer configured to repacketize the encoded non-realtime content slices and the encoded realtime content slices into transport packets;

a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order; and

a re-timestamp unit coupled to the remultiplexer and configured to provide timestamps to be applied to the transport packets in order to synchronize the realtime and non-realtime content of said IPG." (emphasis added).

Applicants have presented the deficiencies of Naimpally and Yanagihara in sections A and B herein. For brevity, Applicants will not repeat those deficiencies in this section. Applicants respectfully submit that claims 10 (which depends from independent claim 1), and 17 and 18 (which depend from independent claim 14) have already been distinguished from Naimpally and Yanagihara. As such, Applicants further submit that claims 10, 17, and 18 are not obvious in view of Naimpally and Yanagihara.

The Examiner has also cited Adams to support the obviousness rejection of claims 10, 17, and 18. Applicants submit that Adams reference in combination with the Naimpally and Yanagihara references also does not teach or suggest the Applicants' invention as a whole.

Adams discloses an apparatus and method for utilizing available bit rate in a constrained bit rate channel. In Adams, The multiplexer includes a number of

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video buffers for receiving encoded video streams from the media servers and an application buffer for receiving the application data stream from the network controller (see Adams, col. 4, lines 35-39). However, nowhere in the Adams reference is there any teaching or suggestion of "a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order."

Rather, the combined references merely disclose a multiplexer for forming transport streams. Nowhere is there any teaching or suggestion of a splice combiner. Moreover, nowhere is there any teaching or suggestion of the slice combiner configured to combine slices of encoded realtime video content with slices of encoded non-realtime video data content in a predetermined order.

Therefore, Nalimpally, Yanagihara, and Adams either individually or in any combination fail to teach or suggest the Applicants' invention as a whole.

As such, the Applicants submit that dependent claim 10 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Likewise, dependent claims 17 and 18 recite similar features as recited in dependent claims 10. As such, the Applicants submit that claims 17 and 18 are not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore, the Applicants respectfully request reconsideration and withdrawal of the obviousness rejection of claims 10, 17, and 18.

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CONCLUSION

Thus, the Applicants submit that none of the claims, presently in the application, are indefinite under the provisions of 35 U.S.C. §112 or obvious under the provisions of 35 U.S.C. §103. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall, Esq. or Steven M. Hertzberg, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Dated: 5/10/04



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